

THE IMPROVED
BUFFALO
HOT WATER
HEATER



H.R. IVES & Co.
MONTREAL.



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...THE...

IMPROVED BUFFALO

HOT WATER HEATER



The only Canadian Boiler awarded Medal and Diploma
at the World's Columbian Exhibition,
Chicago, 1893.

Edition "I"—1st September, 1900.

MANUFACTURED AND
PATENTED BY

H. R. IVES & CO.

Established 1859.

MONTREAL.



THE IMPROVED "BUFFALO"

HOT WATER HEATER.

IN the IMPROVED "BUFFALO" HOT WATER HEATER is found a combination of all the good features claimed for other boilers, with particularly distinct advantages of its own, protected and ensured to us (the manufacturers) by our patents. Some of the BUFFALO'S prominent points of superiority are :

The Complete Boiler is symmetrical and attractive in appearance



Fire Pot.—The corrugations or flutes on the inside of the Buffalo's Corrugated Fire Pot, **extend right down to the grate.** This is particularly beneficial in that it affords space for sufficient air to ascend the sides, to cause perfect but slow combustion of the fuel. It also prevents the lodgement of ashes, and the surfaces of the sections are consequently subject to less ash dust than in other heaters. This, of course, enhances the efficiency of the sections.



Sections.—Each section and water post are cast together, thus saving unnecessary joints, and reducing risk of leaks or breakage to a minimum.



Our sections being of greater diameter than those of other boilers of corresponding size, they have the advantage of greater fire

surfaces. These surfaces remain clean with very slight attention, and the flue holes are constructed and arranged in such system, that no heat can pass to chimney without having first given full and due value. Any section can, if necessary, be easily removed.

Water Ports.—The Water Ports in the sections are also larger, allowing the freest circulation and the quickest return known. This insures a great economy in consumption of fuel.

Base.—The Ash-pit is made with a Patent Sifting Grate, which has a rotary movement. When the fire grate is shaken, the ashes are sifted by the same movement, thus separating any cinders. Ours is the only boiler base with rotary sifting movement, and it is superior to any other device, accomplishing its work with less effort, and without dust, the doors being dust proof.



Grate.—The grate is oscillating and dumping, very heavy, and so arranged that no bolts are exposed to the fire. The whole grate can be taken out and put back by removing two bolts on the outside of the ash-pit.

Capacity.—We rate the BUFFALO in capacity by what each size can actually and easily accomplish. This has been proven by a series of tests.

Castings.—Our castings are, and always have been, unequalled for strength and smoothness.

Fittings.—All parts of the BUFFALO are interchangeable and fitted with the greatest care. Doors and dampers are air-tight and dust-proof.



Trimming.—All Doors and Dampers are trimmed with Nickel-plated Knobs and Alaska Cold Handles, heavy and durable.

Joints.—All Joints have machined surfaces and best rubber packing. Leakage is unheard of in our Improved BUFFALO.

The Vicar-General, Belœil, P. Q., says:
 "I prefer your 'Buffalo' Boiler to all others. Its action is direct and immediate. It uses less coal than the others, and is so easy to regulate."

IMPROVED "BUFFALO" HOT WATER HEATERS.

PRICE LIST, DIMENSIONS AND CAPACITIES.

Size of Boiler.	Capacity of 1-in. Pipe in lineal feet.	Capacity of 4-in. Pipe in lineal feet. For Greenhouses.	Price List, Low Base.	Price List, High Base.	Height of Boiler without Sifting Grate.	Height of Boiler with Sifting Grate.	Diameter of Boiler outside.	Diameter of Fire Pot inside.	Depth of Fire Pot.	Diameter of Smoke Pipe.	Mains tapped for Flows and Returns.	Description of Coal.
0=10	500	175	\$50	\$52	43 1/2 in.	49 1/2 in.	22 in.	16 in.	14 1/2 in.	7 in.	2 & 4	Stove
1=11	700	245	67	69	47	52	22	16	14 1/2	7	4	"
2=12	1000	350	80	83	53	58 1/2	26	21	15 1/2	7	4	"
3=13	1500	525	108	113	57 1/2	63	26	21	15 1/2	7	4	"
4=14	2000	700	136	142	59	65	29	23	15 1/2	9	6	Egg
5=015	2500	875	164	172	61 1/2	67 1/2	32 1/2	27	16	10	8	"
6=15	3000	1050	188	197	65 1/2	71 1/2	32 1/2	27	16	10	8	"
6 1/2=016	3500	1225	240	250	66	73	39	32	17 1/2	10	10	"
7=16	4500	1575	490	302	70	77	39	32	17 1/2	10	10	"
7 1/2=017	5500	1925	300	316	70 1/2	.	43 1/2	37	18	10 1/4	10	"
8=17	6000	2100	316	332	76	.	43 1/2	37	18	10 1/4	12	"
9=18	8000	2800	370	388	81	.	43 1/2	37	18	10 1/4	12	"

Net Prices of Connections.

	Twins	Triplets
Nos. 10 to 15,	\$50.00;	\$70.00
" 016 " 017,	60.00;	80.00
" 17 & 18,	70.00;	90.00

When Boilers are sold with Twin Connections, or without the ordinary Headers, the following allowance per Boiler is made:

Nos. 10 to 14 inclusive, no allowance.	No. 017, \$7.00
No. 015, \$2.00	" 17, 10.00
" 15, 2.25	" 18, 11.00
" 016, 5.00	
" 16, 7.00	

Allowance for Valves when none are required:

4", \$5.00 each.	5", \$7.00 each.
4 1/2", 6.50	6", 9.00

"BUFFALO" HEATER PARTS.

Ques.	10	11	12	13	14	015	15	016	16	017	17 & 18
Ash Pit with Sifting Grate	\$17.00	\$10.00	\$12.50	\$20.50	\$33.00	\$41.00	\$40.50	\$52.00	\$57.00	\$68.50	\$68.50
Ash Pit	15.00	15.00	19.50	22.50	27.00	33.00	37.50	42.00	45.00	52.50	52.50
Ash Pan	1.00	1.10	1.10	1.10	1.10	1.90	1.50	1.50	1.50	1.50	1.50
Ash Pit Door	1.00	1.10	1.50	1.50	1.55	2.25	2.25	2.25	3.00	3.00	3.00
Set Grate Bars	1.85	1.85	2.60	3.00	4.10	4.65	6.00	7.50	12.00	16.50	16.50
Grate Ring	1.10	1.10	1.95	2.25	3.00	3.35	4.50	6.00	7.50	10.50	10.50
Wrought Iron Bar	45	45	60	75	90	1.05	1.20	1.35	1.50	1.50	1.50
Clinker Door	75	75	75	75	75	75	75	90	1.10	1.10	1.10
Shaker	40	40	40	40	40	75	75	75	75	75	75
Shaker Pin	30	30	30	30	30	35	35	35	35	35	35
Fire Pot	18.00	18.00	22.50	27.00	30.00	37.50	42.00	52.50	60.00	67.50	67.50
Fire Door	1.50	1.50	1.50	1.50	1.50	3.00	3.00	3.00	3.75	3.75	3.75
Balls, per set	60	60	60	60	60	1.50	1.50	1.50	2.10	2.10	2.10
Sections, each	7.50	7.50	9.00	11.25	15.00	20.00	24.00	30.00	34.50	42.00	42.00
Rubber Washers, per set	75	90	1.10	1.50	1.50	1.85	2.25	2.60	3.00	3.00	3.00
Cleaning Door	1.10	1.50	1.85	2.60	2.60	3.60	5.00	3.75	4.50	4.50	4.50
Cleaning Frame	45	75	1.10	1.10	1.10	1.10	1.50	2.25	2.25	2.25	2.25
Dome	1.85	1.85	2.60	3.35	3.35	3.75	4.50	6.00	9.00	12.00	12.00
Dome Damper	40	40	40	40	40	75	75	75	75	1.50	1.50
Scraper	75	75	75	75	75	75	75	75	75	75	75
Brush	1.10	1.10	1.10	1.10	1.10	1.50	1.50	1.50	1.50	1.50	1.50
Top Header									16.50	18.00	18.00
Bottom Header						6.00	9.00	10.50	16.50	18.00	18.00
Water Heater	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	3.75	3.75	3.75

TESTIMONIALS.

His Excellency much pleased and interested.

The Governor-General's residence, at Ottawa, situated near the confluence of the Rideau and Ottawa rivers, was heated by *eight hot air furnaces, one hot water Beehive furnace and 24 stoves*. The hot water heating apparatus now in use was constructed to replace the stoves and furnaces.

There are four "*Buffalo*" *Hot Water Heaters*, manufactured by *H. R. Ives & Co., Montreal*, and the heating surface is direct throughout the apparatus. The flow and return mains are carried overhead along the basement corridors. The ground floor mains, excepting in the kitchen wing, are separate from those of the upper floor.

The heating surface is entirely direct, and is in large part cast iron radiators, which were in most instances found more suitable owing to the furniture interrupting the continuity of the wall surface.

The house was originally a villa purchased by the Government and added to from time to time, giving rise to a straggling plan, necessitating unusual arrangements of piping.

The front hall floor is a few feet above that of the furnace room, while the floor of the tennis court basement is lower than the furnace room floor. The tennis court basement is divided into bedrooms, heated by five large box coils placed on the floor and circulating evenly and well, although the return main is fifteen inches lower where it connects with, than its delivery into furnace.

Although the winter was exceptionally severe, and the situation of the house very exposed, the water returned at 130° F. in the most trying weather.

The plans and specifications were prepared and the work carried out under the direction of the chief architect, Department of Public Works, Ottawa.

Government House,

Ottawa, May 9, 1895.

Messrs. H. R. Ives & Co.

DEAR SIRS,—The Governor-General desires me to say that he has much pleasure in informing you that the "*Buffalo*" boilers and connected heating apparatus, erected in the Government House, has given much satisfaction. His Excellency has personally taken much interest in the working of the arrangement, and has watched it with attention. He can therefore the more confidently offer this testimony.

I remain, yours faithfully,

W. T. G. HEWETT.

Cheerfully recommend "Buffalo" for power and easy management.

Hospice Ste-Elizabeth,

West Farnham, P. Q., April 23, 1895.

Owing to our building being a very difficult one to heat, we have for several winters suffered considerably from the cold. This winter we decided to replace the hot water boiler we had been using with a No. 18 "Buffalo" Hot Water Boiler, manufactured by Messrs. H. R. Ives & Co., of Montreal. This last named boiler was placed in our building by Mr. H. N. Bernier, of St. Hyacinthe. It has heated with perfect satisfaction to us, not only our first building, but also the basement of an addition to our building of 52 ft. x 75 ft. We cheerfully recommend this boiler to the public as being not only economical in the consumption of coal, but a powerful and easily managed hot water heater. [Signed] SR. VINCELETTE, Superioress



The "Buffalo" saved seven tons of coal in one winter.

Toronto, March 30, 1895.

Messrs. H. R. Ives & Co.

I am pleased to state that I have had the best of comfort from the "Buffalo" Boiler No. 16. This has been the coldest winter we have experienced in years, and yet I have kept my house comfortably heated on fifteen tons of coal to date. During the few days in February, with the thermometer constantly ranging from 5 to 20 below zero, I had no trouble in keeping the house at a uniform temperature of about 70 degrees. As I had previously burned twenty-two tons in another style of boiler in a mild winter, with much less satisfaction, you can understand my appreciation of your boiler.

[Signed] P. E. DOOLITTLE, M.D.,
180 Sherbourne St., Toronto.



The "Buffalo" gives every satisfaction.

Montreal, April 8, 1895.

Messrs. H. R. Ives & Co.

The "Buffalo" Hot Water Furnace which was placed in this building in 1894 has given every satisfaction. [Signed] J. W. MARLING,

Manager Canada Life Assurance Co.,
Montreal.

Powerful and economical. Does work well.

Moncton, N. B., April 23, 1894.

Messrs. H. R. Ives & Co.

I am happy to be able to state that the two "Buffalo" Hot Water Heaters supplied this winter have been doing their work well. I am well pleased with them. We have twenty-one rooms to be heated in our Public Buildings, including Post Office, Customs, Savings Bank, Caretaker's Department, etc.; also a wing of five rooms for bonded goods, etc., all of which must be kept frost-proof. This has been a severe winter, but we have had no trouble. I find that *one* furnace will do the work about half of the firing season. I am pleased to be able to recommend these heaters to any one requiring a powerful and economical hot water boiler. Should you wish to send any person here at any time to see these boilers, I will be very glad to show them.

[Signed] E. B. HICKS,
Moncton, N. B.



Slow and perfect combustion insures economy.

Mechanics' Institute,

Montreal, June 26, 1900.

H. R. Ives & Co.

I have no hesitation whatever in testifying to the admirable qualities of the "Buffalo" Hot Water Heater manufactured by you. What I notice particularly is that the combustion of the fuel is slow and perfect, thus insuring economy. Wherever your "Buffalo" is used, perfect satisfaction is the result.

[Signed] C. B. PATERSON,
Architect.



From F. W. Campbell, M.D., Dean Faculty of Medicine, University of Bishop's College.

1006 Sherbrooke St.,

Montreal, August 10, 1900.

Messrs. H. R. Ives & Co., Montreal.

When I built my two houses on Sherbrooke street, in 1894-5, I put your "Buffalo" Hot Water Boilers in both, and I have had perfect satisfaction with them. The one which I occupy is much exposed, being on the corner of Sherbrooke and Crescent streets. It is 35 x 75, and consists of four stories, and all are heated by a No. 16 "Buffalo." In the coldest weather I can, with ease, keep the house at a temperature of from 68° to 70° F. On

pressing the Heater, it is easy to get several degrees higher, even with a temperature of 20° below zero outside.

I can also recommend the "Buffalo" as being *economical* in the consumption of fuel.

[Signed] FRANCIS W. CAMPBELL, M.D.



Heat obtained throughout in ten minutes.

College of St. Croix,

Farnham, P. Q., April 13, 1896.

I am well pleased with the "Buffalo" Hot Water Boiler that we purchased for the heating of our establishment. It has given perfect satisfaction. We consider it superior to all other makes of boilers that we have had. The circulation is made with such rapidity that, under action of a new fire, it makes the circuit in less than ten minutes. Certain parts of the building that we have never been able to heat before on account of the distance from the boiler, now receive all the heat required. The boiler is very easy to regulate, and to clean. The fire-place being large, and having direct and immediate action, the circulation is kept uniform, with very little fire. The building heated by this one boiler is 120 x 42 feet in size.

[Signed] B. LECAVALIER, C.S.C.,

Superior College of St. Croix,

Farnham, P. Q.



After a faithful and complete trial.

Fabrique Saint-Jean-Baptiste,

Montreal, January 22, 1898.

My opinion has been asked as to the merits of the "Buffalo" Hot Water Heaters, patented and manufactured by H. R. Ives & Co., Montreal.

We have had two of these Heaters in use at the Hospice Auclair since the fall of 1894. They have always given complete satisfaction. *They are easy to regulate and very economical* as to the quantity of fuel consumed.

I may add that the Saint-Jean-Baptiste Fabrique (Church Wardens) have just put three of the same make of boilers in the Parish Church. It is hardly necessary for me to state that this decision was only arrived at after a faithful and complete trial had been made of the "Buffalo" Hot Water Heaters in use at the Hospice.

[Signed] M. AUCLAIR, Curé.

More heat and less coal using the "Buffalo."

Ottawa, October 18, 1895.

Messrs. H. R. Ives & Co.

I have much pleasure in stating that the "Buffalo" Hot Water Heater purchased in 1894 has given the greatest satisfaction. *I find it very simple in arrangement and it burns the coal thoroughly and efficiently, and that it does not require attending to, except in the morning and evening, in mild weather only once a day.* I had a much smaller furnace before, which I replaced by yours. I found that I did not burn more coal last winter with your furnace than I used with the small furnace, although I had much more heat from your furnace.

[Signed] T. G. COURSOLES.

House of Commons, Ottawa, Ont.



Worthy of encouragement and congratulation.

Parish of St. Joseph de Sorel, Jan. 18, 1895.

Having built a new presbytery last year, we decided to heat it with the "Buffalo" Hot Water Boiler, manufactured by Messrs. H. R. Ives & Co., Montreal, their boiler having been highly recommended to us. We now have pleasure in testifying that this boiler is giving us full satisfaction. We get all the heat desired from a small consumption of coal. We believe this boiler to be worthy of the encouragement of the public, and we desire to compliment the manufacturers.

[Signed] A. BOUVIER, Priest, Curate.



Less coal and more heat.

Montreal, June 22, 1900.

I have pleasure in stating that the No. 3 "Buffalo" Heater and Hamilton Radiators which I put into my house last summer have given the very best of satisfaction.

Comparing their efficiency, I may say that I heated my house last winter with less coal, with this No. 3 Heater, than I used in a precisely similar house fitted with a No. 2 of another make, during the four previous winters. I not only used less coal, but had more heat. I am of the opinion that it is poor economy to have a too small heater.

[Signed] E. G. O'CONNOR.

42 Lorne Ave.

The "Buffalo" ahead of all.

1128 Sherbrooke Street,

Montreal, July 5, 1900.

Messrs. H. R. Ives & Co.

Referring to the "Buffalo" Hot Water Boiler I got from you in 1895, it has done its work well. I consider it equal to any of the heaters I have used, and ahead of them all as to finish. The doors fit perfectly, and there is absolutely no dust when the grate is in play.

[Signed]

JOHN G. SAVAGE,

(Alfred Savage & Sons.)



Cannot speak too highly of the "Buffalo."

Montreal, August 20, 1900.

Messrs. H. R. Ives & Co.

The "Buffalo" Heater put in our store, October, 1893, has given us full satisfaction. It is very economical and easily attended to, and we cannot speak too highly of it.

[Signed]

P. D. DODS & Co.,

Island City Paint Works, McGill St.



Economical and entirely satisfactory.

Kincardine, Ont., February 1, 1895.

Messrs. H. R. Ives & Co.

I am pleased to be able to inform you that the "Buffalo" Hot Water Heater, purchased last year, has given me entire satisfaction. *I find it an economical consumer*, and am glad to be able to recommend it to intending purchasers.

[Signed]

ANDREW MALCOLM,

of Watson & Malcolm, Kincardine, Ont.



Powerful, quick and economical is the "Buffalo."

Montreal, November 16, 1896.

Messrs. H. R. Ives & Co.

I am pleased to be able to report that the three "Buffalo" Hot Water Heaters purchased have proved themselves to be all that you claim for them. I find them to be *very powerful and quick in action, at same time economical* in the consumption of coal. *They are also easily regulated* and kept in order. I can cheerfully recommend them to any one in want of a first-class hot water heater.

[Signed] F. B. McNAMEE.

Saved five tons of coal each winter with "Buffalo."

Quebec, March 30, 1895.

Messrs. H. R. Ives & Co.

With reference to the "Buffalo" Hot Water Boiler No. 16, manufactured by you and shipped in September, 1892, I have to state that I am completely satisfied with it. *It is easy and quick to heat, and very economical in the consumption of coal.* Judging by the reports of my friends who have had similar sized boilers of other manufacture, *their boilers used five or six tons more coal during the season than mine does.* Should I need another boiler at any time, I certainly will give preference to the "Buffalo" Boiler, for reasons above stated.

[Signed]

C. A. PARENT,
Quebec.



Economical. Can confidently recommend the "Buffalo."

Montreal, April 6, 1895.

Messrs. H. R. Ives & Co.

This is my third winter using your "Buffalo" Boiler No. 15, and it has given me great satisfaction. I have heated my store and two dwellings, one containing nine rooms and two large halls, the other six rooms. The store is on a corner. It is large, and there are three doors constantly opening and closing. I have used 14 tons of coal to date, and can confidently recommend the "Buffalo" Boiler as an economical and powerful heater.

[Signed]

R. TURNER,
601 Wellington St., Montreal.



Is entirely satisfactory. Surpasses anticipation.

Montreal, April 4, 1895.

Messrs. H. R. Ives & Co.

I have much pleasure in stating that the two "Buffalo" Heaters put in our new building *have given entire satisfaction, and the consumption of coal has been less than might have been expected;* in fact our engineer considers the "Buffalo" Heater *very economical as well as efficient.* I may add that no breakage or interruption of any kind has occurred since the Bank took possession of the building.

[Signed] THOS. F. HOW,
Manager Bank of Toronto.

A FEW PURCHASERS

OF THE

Improved "Buffalo" Hot Water Heaters.

Angell & Co., St. John's, N. F.
 Canada Life Building, Montreal.
 T. Graham Fraser, Esq., New Glasgow, N. S.
 J. A. Dickey, Esq., C. E., Amherst, N. S.
 Oxford Restaurant, Montreal.
 Pacaud Block, St. Catherine Street, Montreal.
 Homeopathic Hospital, Montreal.
 Dominion Cartridge Company, Montreal.
 Stanley Flats, Montreal.
 Dominion and Provincial Governments.
 Rideau Hall, Ottawa.
 Sun Life Assurance Company, Hamilton.
 Thos. F. How, Esq., Bank of Toronto, Montreal.
 Hotel Savoy, Victoria Street, Montreal.
 E. M. Renouf, Montreal.
 Lachine Rapids Hydraulic and Land Company.
 Prof. C. H. McLeod, McGill College Observatory.
 Taylor & Raper, Johannesburg, South Africa.
 Bank of Montreal, Montreal.
 St. Gabriel Presbytery, Montreal.
 Sun Life Assurance Company, Sherbrooke.
 C. A. Coderre, Esq., St. Hyacinthe.
 Colonel Donaldson, Ottawa.
 Sir Adolphe Caron, K.C.M.G., Ottawa.
 McKinnon & McKean, Charlottetown, P.E.I.
 Andrew Malcolm, Esq., Kincardine, Ont.
 Thos. Birkett, Esq., Ottawa.
 Longue Pointe Asylum, Montreal.
 Nuns of the Presentation of Mary, at Farnham, P.Q.
 P. E. Doolittle, Esq., M.D., Toronto.
 Opera House, Rat Portage.
 St. Jean-Baptiste Church, Montreal.
 St. Margaret's Home, Sherbrooke Street, Montreal.
 Hospice Ste. Elizabeth, West Farnham, P. Q.
 Tucker School, Montreal.
 Laurentide Pulp Company, Grand' Mère, P. Q.
 City Hall, Farnham, Que.
 Balmoral Hotel, Farnham, Que.
 T. Hebert, Esq., St. Hyacinthe.

Ottawa University, Ottawa.
 Synod Building, Montreal.
 McKenna's Greenhouses, Cote-des-Neiges.
 New Royal Hotel, Hamilton.
 Dr. F. W. Campbell, Sherbrooke Street, Montreal.
 Messrs. Darling Bros., Queen Street, Montreal.
 St. Denis Church, Montreal.
 Côte St. Paul Church.
 R. T. Rutherford's residence, Westmount.
 E. G. O'Connor, Esq., Montreal.
 G. S. Plow, Esq., Montreal.
 Judge Alderic Ouimet, Bay View.
 Marlborough Flats, Montreal.
 Unity Hall, Point St. Charles.
 Ald. Tansey's Block, Montreal.
 Wolseley Barracks, London, Ont.
 Messrs. P. D. Dods & Co., Island City Paint Works.
 L. P. Morin, Esq., Contractor, St. Hyacinthe.
 Rev. A. Bouvier, Parish St. Joseph de Sorel.
 Rev. J. A. Gravel, Vicar-General Belœil, P. Q.
 Ald. R. Turner, 601 Wellington Street, Montreal.
 J. E. Martineau, Esq., Quebec.
 W. A. Verge, Esq., M.D., Grand Allée, Quebec.
 T. Butler, Tara Hall, Montreal.
 C. A. Parent, Esq., Hardware Merchant, Quebec.
 D. W. McKinnon, North Sydney, Cape Breton.
 C. H. Liffiton, Montreal.
 Messrs. N. Lemieux & Fils, Quebec.
 Thos. Munroe, Esq., C. E., Government Engineer.
 Jos. Quinn, Montreal.
 Hotel Cecil, Victoria Street, Montreal.
 City Hall, St. Thomas, Ont.
 Royal Canadian Regiment Barracks, St. Johns, Que.
 Royal Electric Co., Montreal.
 Bell Telephone Co., Quebec.
 Quebec Bank, Quebec.
 Judge Chauveau, Quebec.
 City Hall, Ottawa.

And in the following public buildings :

Montreal, P. Q.; Quebec, P. Q.; Richmond,
 P. Q.; Moncton, N. B.; St. Stephen, N. B.;
 Sussex, N. B.; Moosomin, N. W. T.; Prince
 Albert, N. W. T.; Portage la Prairie, N. W. T.;
 Citadel, Quebec.

